The Effect of Group Size on Student Participation
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Motivation
- In pursuit of enhancing student engagement in classroom, several studies were conducted to assess students’ participation. While literature has a lot to say about the effect of classroom size on students’ participation, few researchers consider small-size workshops as opposed to classrooms.

Goal: Assess the effect of group size in small workshops on the participation of students.

Hypothesis: A smaller group size yields to higher student participation.

Investigation: Students were divided into smaller groups of two, three, four, or five. In the course of 4 weeks, each student received a participation survey at every workshop with which they self-reported their participation during the workshop.

Definitions: Group size preference refers to the size of group in which a student’s participation was maximized.

Methodology
1. Mean Participation Method:
   - Finds the mean participation of a student within a given group size.
   - Uncertainty: Standard deviation of student participation in a given sized group.

2. Summing Individual Group Size Preference Method:
   - Determines each student’s preferred group size; sums number of students favoring each size.
   - Uncertainty in student participation: standard deviation according to Poisson distribution.
   - Significance in size preference determined through comparing uncertainty in a student’s participation scores within each group size.
   - Alleviates the issue of bias in self-reporting by comparing a student to only him/herself.

Results and Analysis
- Students in a group of 3 had greater mean participation score than those in groups of 4 or 5. The participation within a group of 2 versus a group of three was not significantly different.

- No significant preference for a specific group size was found in the Second Method.

Drawbacks:
- Using the mean makes the first method sensitive to outliers
- Limited sample size leads to large uncertainties.

Future Work
- Further investigate these trends more rigorously with a larger sample size and additional trials for each student.
- Have an experimenter to count participation to replace self-reports.

Acknowledgements: Dr. Justin Smith, Professor Jack Mottley, and Professor Julie Bentley for their support and advice